

Memorandum

Subject: **INFORMATION:** Joint AASHTO/FHWA
International Technology Scanning Program
Fiscal Year 2006-2007

Date:

From: Charles D. Nottingham
Associate Administrator for Policy

In reply
Refer to: HPIP
Attn: Nevares.x69197

To: Associate Administrator for Planning, Environment,
and Realty (HEP-1)
Associate Administrator for Infrastructure (HIF-1)
Associate Administrator for Operations (HOP-1)
Associate Administrator for Federal Lands Highway (HFL-1)
Associate Administrator for Safety (HSA-1)
Associate Administrator for Research, Development,
and Technology (HRT-1)
Associate Administrator for Professional Development (HPD-1)
Associate Administrator for Corporate Management (HCM-1)
Resource Center Managers

We are pleased to announce that the Federal Highway Administration (FHWA) and the American Association of State Highway and Transportation Officials (AASHTO) are accepting scan proposals for the fiscal year (FY) 2006-2007 cycle of the Joint AASHTO/FHWA International Technology Scanning Program. The purpose of this memorandum is to provide you with information on the process for submitting scan proposals as well as key dates and specific actions required by FHWA offices and AASHTO committees in order to participate in the program. The deadline for submitting scan proposals is **March 15, 2005**.

Since 1990, the U.S. has reached beyond its borders to expand transportation knowledge through the International Technology Scanning Program. Over 60 scans have been conducted to date, resulting in a wealth of information and benefits to the U.S. transportation community. The program links U.S. highway experts with their counterparts around the world to learn about the newest technologies and practices. Scans are normally conducted early in the innovation cycle, helping put a particular technology or practice in context by evaluating it in practice outside of the U.S. environment. This allows the U.S. transportation community to learn from the successes, as well as the failures, of other countries in order to avoid duplicative research and development and to accelerate improvements to U.S. transportation facilities.

Many significant changes in U.S. highway practices in recent years have come from or benefited from the scanning program. The following are just a few highlights of new ideas and technologies recently identified on scans, which are taking root in FHWA, State departments of transportation, cities and counties, private companies, and universities.

Pavement Preservation: Throughout Australia, a treatment called geotextile-reinforced sprayed seals has been successfully placed on many miles of low volume roads. The treatment, which involves tack coating the existing pavement, spreading a geotextile, and capping with a chip seal, is used on roadways with moderate cracking. This treatment retards reflective cracking in Australia's wet and dry no-freeze climates. This technology intrigued members of the Scan Team leading them to develop biddable specifications and build sections in several States. The first has just been placed in Texas. It will be evaluated over the next 3 years to determine its effectiveness.

Intelligent Compaction: Germany, Sweden, and other European countries have nearly 10 years experience with intelligent compaction of both soils and asphalt. With measurement devices mounted on the compactor that relate to plate load test values, the operator is able to see the actual percent compaction that is occurring under the roller. This improves both quality and productivity. The Bridge and Embankment Scan team members are working with the equipment manufacturers who have agreed to bring their equipment to the U.S. for demonstration projects and for further evaluation. Demonstrations are scheduled for both Texas and Minnesota this year. A strategic planning meeting will also be held at the National Center for Asphalt Technology in Auburn, Alabama, to develop a comprehensive approach for asphalt technology.

Quiet Pavements

Many European countries have been developing new pavement products that help reduce noise generated by pavement/tire interaction. The solutions include porous pavements, exposed aggregate, and other techniques that may have promise in the U.S. As a result of the Quiet Pavements Scan, FHWA, in cooperation with Iowa State University, is organizing a workshop to: (1) help develop a national surface characteristic strategic plan that will address tire/pavement noise issues and (2) build experimental sections based in part on European experiences. Additionally, the Scan Team will send a test vehicle to Europe to collect data on tire/pavement noise. The intent is to compare U.S. values with European values to further assure that technology, research, and product development can be interchanged more effectively in this key subject area.

Superior Materials – Accelerated Paint Wheel

Accelerating the testing of materials has always been a challenge to the DOT materials engineers. In Germany, the Scan Team heard about an accelerated paint wheel that can quickly evaluate new and innovative paints. The 8m diameter test wheel is equipped with a series of tires that run over painted test paddles to determine wear rates with variable environmental and loading facilities. The Scan Team is putting together a plan that will address the design, construction, and operation of such a facility here in the U.S., in cooperation with representatives from the paint industry.

This challenging implementation item could lead to much faster and more accurate evaluation of paint and improve life and safety considerations.

The scanning program offers many benefits and opportunities and we encourage you to take part in the program. For your information and use, attached are the following: (1) list of all completed and planned scans; (2) instructions and details on the scan proposal and selection process; (3) frequently asked questions about the scanning program; (4) a blank scan proposal form; and (5) a sample scan proposal submission. Please be reminded that the deadline for submitting scan proposals is March 15, 2005.

If you have any questions or need further information, please contact the Office of International Programs at (202) 366-0111.

5 Attachments

cc: Division Administrators
FHWA Office Directors

FHWA/HPIP:HMaier:bar:60111:10/18/04

cc:

HPL HPIP Nevares Maier

File: L:HPIP:Scanning

File name: Scanning memo Solicitation for FY 2006-2007

List of All Completed and Planned Scans by Subject Area

Pavements and Materials

- European Asphalt Study Tour (1990)
- Tour of European Concrete Highways (1991)
- Issues and Options in Highway/Commercial Vehicle Interaction – N. America (1994)
- Issues and Options in Highway/Commercial Vehicle Interaction - Europe (1995)
- South African Pavement Technology (1996)
- Recycled/Secondary Materials (1999)
- Techniques for Pavement System Preservation (2001)
- Asphalt Pavement Warranties (2002)
- Superior Materials, Advanced Test Methods and Specifications (2003)
- Quiet Pavement Systems (2004)

Operations

- Intermodal Transportation Issues (1993)
- Advanced Transportation Technology (1994)
- Winter Road Maintenance Practices (1994)
- Traffic Management and Traveler Information Systems (1996)
- European Traffic Monitoring Programs and Technologies (1996)
- Winter Road Maintenance Practices II (1998)
- Innovative and Emerging Traffic Controls for Congestion and Safety (1998)
- Methods and Procedures to Reduce Motorist Delay in Construction Zones (1999)
- Geometric/Context Sensitive Design (2000)
- Improving System Performance through Better Operations (2001)
- International Freight Logistics (2001)
- Advanced Traveler Information Systems in Europe (2001)
- Winter ITS Technologies (2002)
- U.S.-Latin America Freight Logistics (2002)
- Traffic Incident Response (planned 2005)
- Managing Traffic Congestion and Demand (planned 2005)

Safety

- Pedestrian and Bicycle Safety in England, Germany and The Netherlands (1994)
- Speed Management and Enforcement Technology: Europe and Australia (1994)
- Human Factors Technology for Highway Design (1995)
- Railroad-Highway Grade Crossings Protection Technology and Closing Programs (1997)
- Road Safety Audits – Final Report (1997)
- Road Safety Audits – Case Studies (1997)
- New Roadway Lighting Techniques and Technologies (2000)
- Highway Safety Improvement Programs in Europe (2002)
- Signalized Intersection Safety (2002)
- Highway Safety Information Systems (2003)
- Human Roadway Factors (2004)
- Safety Applications of ITS Systems (planned 2005)

Bridges and Structures

- Bridge Structures - Europe (1995)
- Northumberland Bridge Review - Canada (1995)
- Bridge Coatings (1996)
- Advanced Composites in Bridges in Europe and Japan (1997)
- Bridge Structures - Asia (1997)
- Bridge Scour Countermeasures (1999)
- Steel Bridge Fabrication and Erection Technology (1999)
- Durability of Concrete Segmental and Cable-Stayed Bridges (1999)
- Accelerated Construction of Bridge and Embankment Foundations (2002)
- Bridge Systems Preservation and Maintenance (2003)
- Prefabricated Bridge Elements (2004)
- Underground Highway Systems (planned 2004)

Geotechnology

- Geotechnology - Soil Nailing (1993)
- International Scanning Tour for Geotechnology - Canada and Europe (1998)

Planning, Environment and Right-of-Way

- Wildlife Habitat Connectivity Across European Highways (2001)
- European Practices for Sustainable Development (1999)
- Right-of-Way and Utilities Best Practices (2000)

Policy

- National Personal Transportation Studies (1994)
- Performance Measures (2004)

Motor Carriers

- Commercial Vehicle Safety Technology and Practice in Europe (1998)

Agency Organization and Management

- Acquiring Highway Transportation Information from Abroad (1994)
- Transportation Agency Organization and Management (1997)
- Transportation Workforce Development (2001)
- Transportation Asset Management (planned 2005)

Contract Administration

- Contract Administration Techniques for Quality Enhancement (1991)
- Contract Administration (2001)
- Construction Management (2004)

Instructions and Details on the Scan Proposal and Selection Process

Deadline for Scan Proposals:

Scan proposals are due by **March 15, 2005**.

Because each scan requires a minimum 6-month lead-time to organize, the FY 2006-2007 program must be in place by June 2005 (i.e., scans to be conducted in fall/winter 2005 must begin organizing in summer 2005).

Scan Proposal Process:

Scans can be proposed by FHWA, AASHTO, and indirectly by NCHRP Project Panel 20-36, as detailed below:

FHWA - Scan proposals may be submitted by FHWA Program Offices and by Resource Centers. Proposals originating from other offices (i.e., Division Offices) must be channeled through a Program Office or Resource Center. Each proposal must be endorsed by the Associate Administrator of the corresponding Program Office or Resource Center Director. Proposals may be submitted for co-sponsorship by two or more Program Offices, Resource Centers, or any combination thereof (i.e., cross-cutting scan topics). In such cases, the proposal must have endorsement from the Associate Administrator of each of the corresponding Program Offices and/or Field Service Directors.

AASHTO - Scan proposals may be submitted by any AASHTO committee or subcommittee dealing with road transportation. Each proposal must be endorsed by the relevant committee or subcommittee chairman. Proposals may be submitted for co-sponsorship by two or more AASHTO committees or subcommittees (i.e., cross-cutting scans). In such cases, the proposal must have endorsement from each of the corresponding committee chairmen.

NCHRP Project Panel 20-36 – Other non-AASHTO or FHWA scan proposals (such as transportation industry associations or academia) may be submitted to NCHRP Project Panel 20-36. Project Panel 20-36 will evaluate such proposals and forward promising ones to the relevant AASHTO Committee for consideration in preparing scan proposals.

Scan Proposal Form:

Please submit your scan proposal using the form available electronically on the FHWA's Office of International Programs website: www.international.fhwa.dot.govT and the AASHTO website: www.transportation.org. You may download the form directly from the website. We ask that you please fill out the form and forward your proposal(s) electronically to the Office of International Programs at www.international.fhwa.dot.gov. In addition, please send the original signed form to:

Federal Highway Administration
Office of International Programs
Attn: Hana Maier
400 7th Street, SW – Room 3325, HPIP
Washington, DC 20590
(202) 366-0111

A sample proposal form is attached for your reference (Attachment 5). Please be thorough when completing the proposal form; incomplete proposals will be returned for further development.

Scan Selection Process:

Scan proposals will be reviewed, evaluated, and prioritized by an AASHTO/FHWA scan selection panel made up of members from:

1. FHWA's scan evaluation group (to be designated), which will include one delegate representing the Resource Centers, one delegate representing the Division Offices and one representative (at the Office Director level) from each of the following Program Offices:

Office of Infrastructure
Office of Planning, Environment, and Realty
Office of Operations
Office of Safety
Office of Federal Lands Highway
Office of Research, Development & Technology
Office of Policy
Office of Professional and Corporate Development

2. AASHTO's Special Committee on International Activity Coordination, which includes members from the Standing Committee on Highways, its subcommittees, and other AASHTO committees dealing with highway transportation.

Proposals will be evaluated according to the following criteria:

- Whether the scan supports AASHTO and FHWA strategic goals;
- Whether the scan has the potential to produce technologies or procedures that the U.S. highway community can adopt/adapt; and
- Whether a scan is the most appropriate method for exploring and evaluating the proposed technology or methodology at this time.

Also, in order to avoid duplication, AASHTO and FHWA panel members will consider whether the proposed topic has already been sufficiently covered by a previous scanning effort.

Number of Scans to be Selected:

Eight scans will be selected, plus two contingency scans. It is envisioned that four scans will be conducted per year.

Scan Financing:

All scans that are part of the Joint AASHTO/FHWA Scanning Program are co-financed by AASHTO and FHWA. The cost of a scan, including report development, in the FY 2006-2007 period is estimated to be \$240,000. This cost includes the development of a Scan Technology Implementation Plan (STIP), however, does not include funding for follow-on scan implementation. AASHTO's share of funding (\$120,000) is channeled through NCHRP Project Panel 20-36, "Highway Research and Technology – International Information Sharing." FHWA's share of funding (\$120,000) is obtained through the Research and Technology Program and is co-financed between the Office of International Programs (\$60,000) and the respective Program Office(s) and/or Resource Center (\$60,000). Please note that costs can vary from scan to scan, based on several factors.

The estimated cost of a scan includes all activities required to plan, coordinate, and conduct a scan. It also includes the following post-scan activities: (1) preparation of a summary of scan team findings; (2) development of a PowerPoint presentation on scan findings; (3) scan report development (including editing, design, and printing); (4) development of a scan technology implementation plan and (5) a post-scan team reassembly meeting. These activities are undertaken by a contract team which is managed by OIP and which works closely with scan team members.

The program pays all travel expenses for Federal, State, local government, academia representatives that are selected to participate on scan studies, including a report facilitator. In addition, representatives from other DOT administrations and offices, U.S. government agencies, foreign governments and agencies, and the private sector may be invited to participate on scans, in which case they are required to pay their own expenses.

AASHTO/FHWA seed money to promote the early implementation of selected technologies and practices, as identified in the STIP, is available through AASHTO and FHWA. To obtain these funds, scan teams are required to submit their STIP to an AASHTO/FHWA/NCHRP Implementation Working Group for review, approval, and allocation of scan implementation funding (up to \$40,000). Submissions for STIP funding also require matching funds from other sources (FHWA Program Offices, AASHTO, State DOTs, private sector).

FHWA offices that sponsor scans should plan on providing to OIP 25 percent of the estimated total actual cost of their scan (approximately \$60,000). It is requested that these funds be provided to OIP as early as possible in the fiscal year that the scan will be undertaken. Sponsoring offices should keep in mind that the total cost varies from scan to scan, depending on the unique factors, circumstances and complexities associated with each scan (i.e., number of scan team members funded by the program, countries visited, fluctuations in currencies, travel and lodging costs, etc.). OIP will work closely with

sponsoring offices to keep them informed of scan costs, as well as factors that affect scan costs, throughout the scan process. A true estimate of final costs is not possible until approximately 1-2 months prior to the scan, when most of the coordination is completed, the itinerary is in place and tickets are purchased. Final scan costs are not known until after the scan has been completed. Once the total cost of a scan is available, the Office of International Programs will coordinate closely with the sponsoring FHWA office(s) to: (1) refund their share of any remaining funds or (2) collect their share of any additional funds that were needed to cover the cost of the scan.

With respect to scan implementation, it is recommended that FHWA offices that sponsor scans also plan to budget for follow-up scan implementation.

Selection of Scan Team Members:

All Joint Program scans will have an AASHTO and FHWA co-chair. AASHTO team members are selected by AASHTO Headquarters. FHWA team members are selected by the Associate Administrator of the respective Program Office or by the respective Director of Field Services. Other team members (report facilitator, local government, academia, and private-sector representatives) are identified jointly by the scan co-chairs.

Implementing Scan Findings:

Scan co-chairs and team members will have prime responsibility for organizing and participating in actions to disseminate and implement useful scan results in the United States. In addition to the production of a scan report, follow-up actions may take the form of articles, presentations, workshops, full-scale demonstrations, revised technical guidelines/standards, etc. Whatever the activity, scan team members, as well as relevant AASHTO committees and FHWA offices, are expected to play a primary role in implementing promising scan findings in the United States.

AASHTO and FHWA seed money is available to promote early implementation of promising technologies and policies identified on the scan. In order to be eligible for implementation seed money, each team is required to form an implementation sub-team and develop a scan technology implementation plan (STIP). A Scan Implementation Working Group made up of one member each from the AASHTO Special Committee on International Activity Coordination, FHWA's Office of International Programs, and the NCHRP Project 20-36 reviews the STIP, concurs on the funding allocation, and tracks expenditures.

Frequently Asked Questions About the Scanning Program

What is the purpose of the scanning program?

The International Technology Scanning Program connects U.S. highway and transportation officials with their counterparts throughout the world. The purpose of the program is to enable U.S. experts to meet with international experts in their venue, gather information on innovative practices, understand them better, and evaluate them within the U.S. context. Since the program was established, more than 50 scanning studies have been conducted covering various surface transportation topics.

What are the goals of the scanning program?

The goals of the International Technology Scanning Program are to:

- Help ensure that the U.S. highway community is world class in technical and managerial areas of the highest priority.
- Enable the United States to access the results of foreign investment in highway research and development and implementation.
- Avoid unnecessary U.S. duplication of advances developed by other countries, enabling advanced technology to be developed and put into practice more quickly and allowing more efficient use of research funds.
- Facilitate opportunities for joint research and technology-sharing with international counterparts, further conserving resources and advancing the state of the art.
- Foster international networking and the development of valuable professional connections between U.S. transportation professionals and their international counterparts.
- Facilitate the successful implementation of key foreign innovations in the United States.

Does the program exist under legislative authority?

The program was established under Title 23, United States Code, Section 506, International Highway Transportation Outreach Program, which states that the U.S. DOT Secretary may establish an international highway transportation outreach program and inform the United States highway community of technological innovations in foreign countries that could significantly improve highway transportation in the United States.

Section 506 further outlines authorized activities, including developing, monitoring, assessing, and disseminating information about highway transportation innovations in foreign countries that could significantly improve highway transportation in the United States.

How does FHWA interface with AASHTO on the program?

Since 1990, FHWA and AASHTO have cooperated in the International Technology Scanning Program. In 1998, FHWA and AASHTO, through its Special Committee on International Activity Coordination, agreed to establish the Joint AASHTO/FHWA International Technology Scanning Program.

The joint scanning program is one of the highest priorities of AASHTO's Special Committee on International Activity Coordination. This committee was established under Administrative Resolution AR-2-97, which was approved by the AASHTO Board of Directors on April 28, 1997. It is charged with coordinating the international activities of the association and includes representatives from the Standing Committee on Highways and its subcommittees and other AASHTO committees. It is the only AASHTO committee whose membership includes representatives from all AASHTO technical standing committees and subcommittees.

Through NCHRP Project Panel 20-36, AASHTO co-finances with FHWA all scans that are part of the joint program. AASHTO and FHWA jointly select topics to be studied and cooperate on implementation.

What is the role of the Office of International Programs?

In addition to providing 25% of the funding for the scanning program, FHWA's Office of International Programs (OIP) is responsible for providing program oversight and administration to the scanning program. This includes managing day-to-day scan program activities, undertaking close coordination and cooperation with AASHTO, NCHRP Project Panel 20-36 and FHWA Program Offices on issues related to the program, coordinating the scan proposal and selection process and providing general direction to the program. OIP is also responsible for managing the scan contract, directing the scan contractor and providing oversight of scan finances.

OIP is also responsible for editing, designing and publishing scan reports. In addition, OIP maintains a web page for the scanning program, which includes access to all published scan reports.

What is the role of the scan contractor?

For each scan, the contractor undertakes the following activities:

- Plans, coordinates, and facilitates pre-scan team organization meetings and conference calls.
- Coordinates the development of an overview paper, amplifying questions, bios, and other materials as needed.
- Subcontracts a report facilitator to develop the desk scan, scan report, PowerPoint presentation, and initial summary of scan findings.
- Coordinates with foreign transportation agencies to arrange program of meetings and site visits appropriate to the subject and goals of scan.

- Makes all travel and logistical arrangements for scan team members.
- Accompanies the scan team during international phase of scan.
- Facilitates post-scan team meeting, scan presentation and conference calls.
- Oversees timely preparation of final scan report (with input from foreign hosting agencies).
- Provides guidance to scan team on scan implementation.
- Coordinates closely with FHWA, AASHTO, and NCHRP 20-36.

Can you describe a scan study?

Scan studies involve teams of managers and specialists in a particular discipline who are dispatched to consult with foreign counterparts in Europe, Japan, Australia, New Zealand, Canada, and other countries where advances in transportation relevant to the United States are being made. Each study focuses on a topic of high interest to the domestic transportation community.

The team normally consists of 8 to 12 members. While the team makeup varies from one scan study to another, participants typically include representatives from FHWA, State departments of transportation, local governments, and when appropriate, transportation trade and research groups, the private sector, and academia.

How long does a scan study last and how many countries are visited?

A scan usually lasts 14 days. Teams normally visit four countries during that timeframe. The countries visited are principally technically and economically developed countries, especially the countries of Western Europe, Canada, Japan, Australia, and New Zealand.

How many scans are conducted per year?

Historically, the program has averaged about four scans per year. The number of scans is a function of budget, subject, and assurance that scan team visits do not overwhelm our international partners.

Can you describe the scan timeline?

The process normally begins approximately 9 months before the scan. FHWA and AASHTO identify co-chairs who are experts in the subject area of the scan. The co-chairs identify a scan report facilitator. As coordinated by the scan contractor, the report facilitator conducts a desk scan to identify target countries and prepares a first draft of amplifying questions for the team and host country officials.

The contractor organizes and conducts a meeting of the scan team approximately 6 months prior to the scan. Team members get to know each other, review the desk scan, complete the amplifying questions, identify the key countries to visit, and learn about the administrative details necessary to make a successful scan.

Team members travel independently to the first country and then travel together, accompanied by the scan contractor. During the scan, the team collects and organizes the information provided by each host country. The report facilitator is key to this effort.

After returning to the United States, and as coordinated by the scan contractor, the scan team develops a 30-day initial summary of scan findings, PowerPoint presentation and implementation plan. The report facilitator works with the scan team to complete the scan report. The team is reassembled approximately 60 days after the scan to further expedite the report development and implementation efforts.

How are countries selected?

A desk scan is conducted to gather information on prospective countries to visit on a scan. Desk scans are typically conducted by the report facilitator and do not involve travel. They are limited, office-based information-gathering projects designed to supplement and further define scan topics that have been approved. Desk scans do not gather information on domestic practices nor in-depth information on foreign practice. These tasks are reserved for the full scan team. The objectives of a desk scan are to:

- 1) further the efforts of the full scan team in acquiring information of value to the U.S. highway community;
- 2) increase the cost-effectiveness of a full scan by advising a team where best to commit its time abroad; and
- 3) help to refine the scope of the scan by identifying relevant sources of information abroad and narrowing the focus of the scan if it is determined to be too broad.

Desk scans are undertaken after scan co-chairs are selected. They are completed at least 6 months prior to the anticipated date of foreign travel.

How are scans documented?

An initial summary of scan findings, that concisely documents what the scan team observed, is prepared within 30 days after the conclusion of the scan. The summary is also the first attempt to develop an implementation plan.

With the 30-day report, each team develops a presentation that is used at workshops, conferences, and symposiums around the country.

Scan study findings are compiled into a full scan report. Reports serve as valuable tools to inform the domestic highway community about innovative foreign transportation technology and methods. The report facilitator is responsible for drafting the scan report in coordination with team members. The full report is coordinated with foreign hosting agencies, posted on the Web, and distributed to the FHWA, States, and industry.

How does the team implement new technologies?

After developing a list of key implementation items, team members are responsible for moving the concept through their agency, committee, or association, as appropriate.

AASHTO and FHWA also provide a small amount of money to help the scan team initiate one or two of the key implementation items. This process is known as the Scan Technology Implementation Program (STIP).

Finally, many items lead to demonstration projects, research statements, or policy discussions. It is amazing how many topics lead to solid implementation efforts.

Where do I go for more information?

For additional information:

Federal Highway Administration

Office of International Programs
400 7th St., SW, Room 3325
Washington, DC 20590
<http://international.fhwa.dot.gov>

American Association of State Highway & Transportation Officials

444 N. Capital Street, NW, Suite 249
Washington, DC 20001
<http://www.transportation.org>

National Cooperative Highway Research Program

500 Fifth St., NW
Washington, DC 20001
<http://www4.trb.org/trb/crp.nsf>